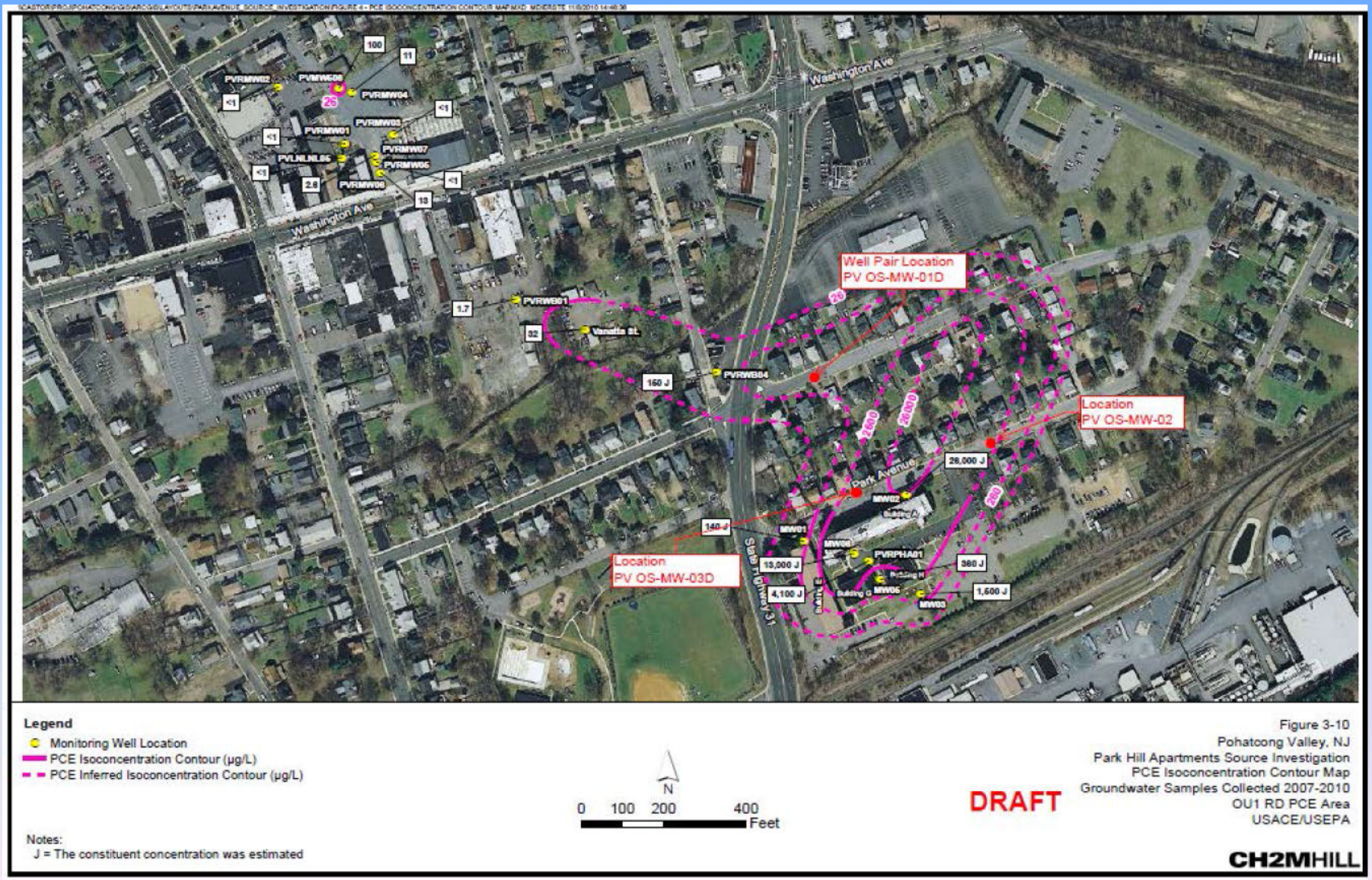
Pohatcong Valley Groundwater Contamination Site
Operable Unit 1 (OU1) PCE Study Area
Washington Borough, Warren County, NJ
October 2011

Tung Sol Tubing (TVN) Historic Aerial Photo (est. 1950s)

Current Aerial Photo



Legend

- Monitoring Well Location
- PCE Isoconcentration Contour (µg/L)
- PCE Inferred Isoconcentration Contour (µg/L)

Notes:
J = The constituent concentration was estimated

N

0 100 200 400 Feet

DRAFT

Figure 3-10
Pohatcong Valley, NJ
Park Hill Apartments Source Investigation
PCE Isoconcentration Contour Map
Groundwater Samples Collected 2007-2010
OU1 RD PCE Area
USACE/USEPA

CH2MHILL

Site Description

Area-wide groundwater contamination site.

Groundwater plume extends 10 miles.

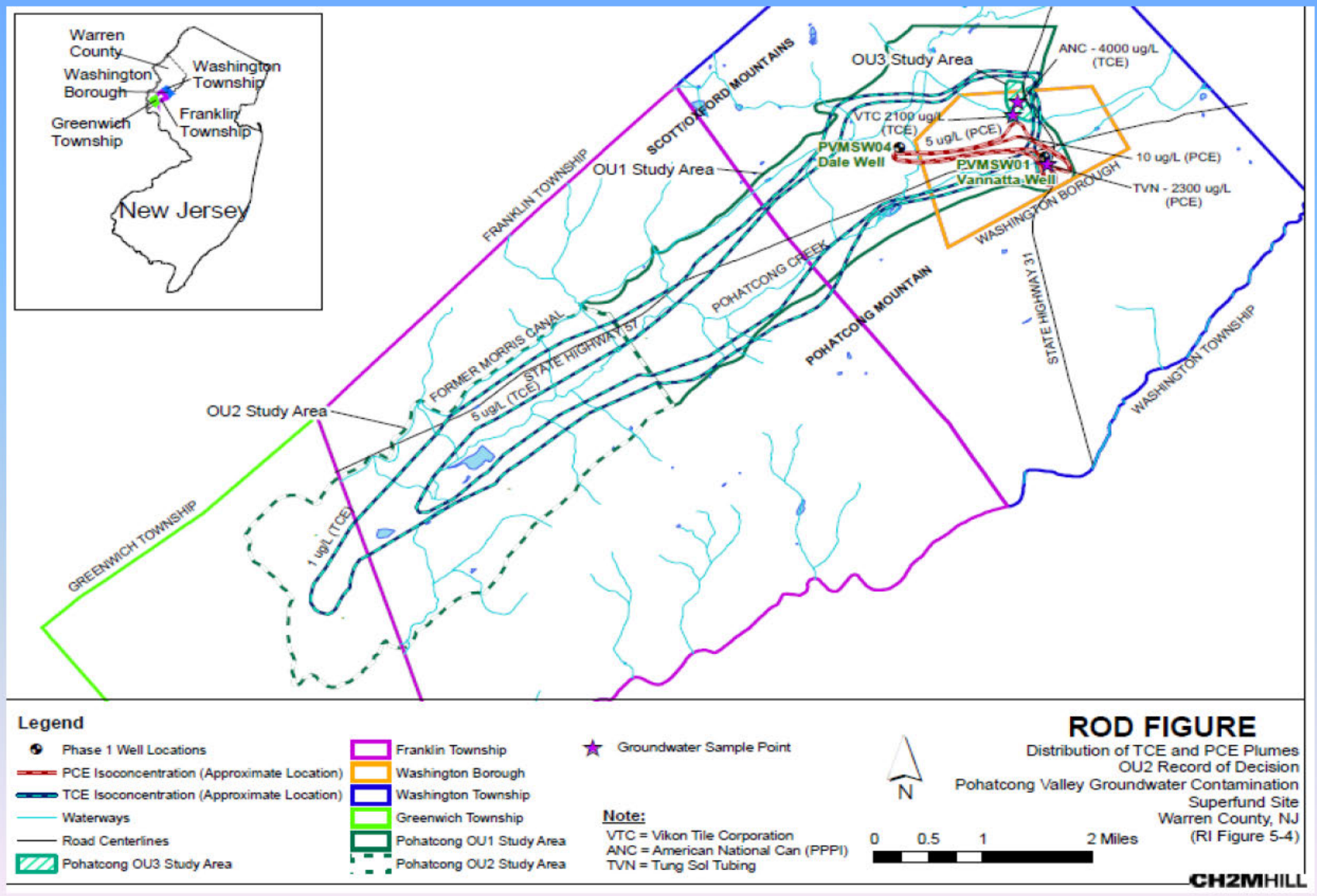
Major contaminants are TCE and PCE.

TCE and PCE originate from multiple sources.

Public and private wells impacted.

VI impacts to indoor air quality.

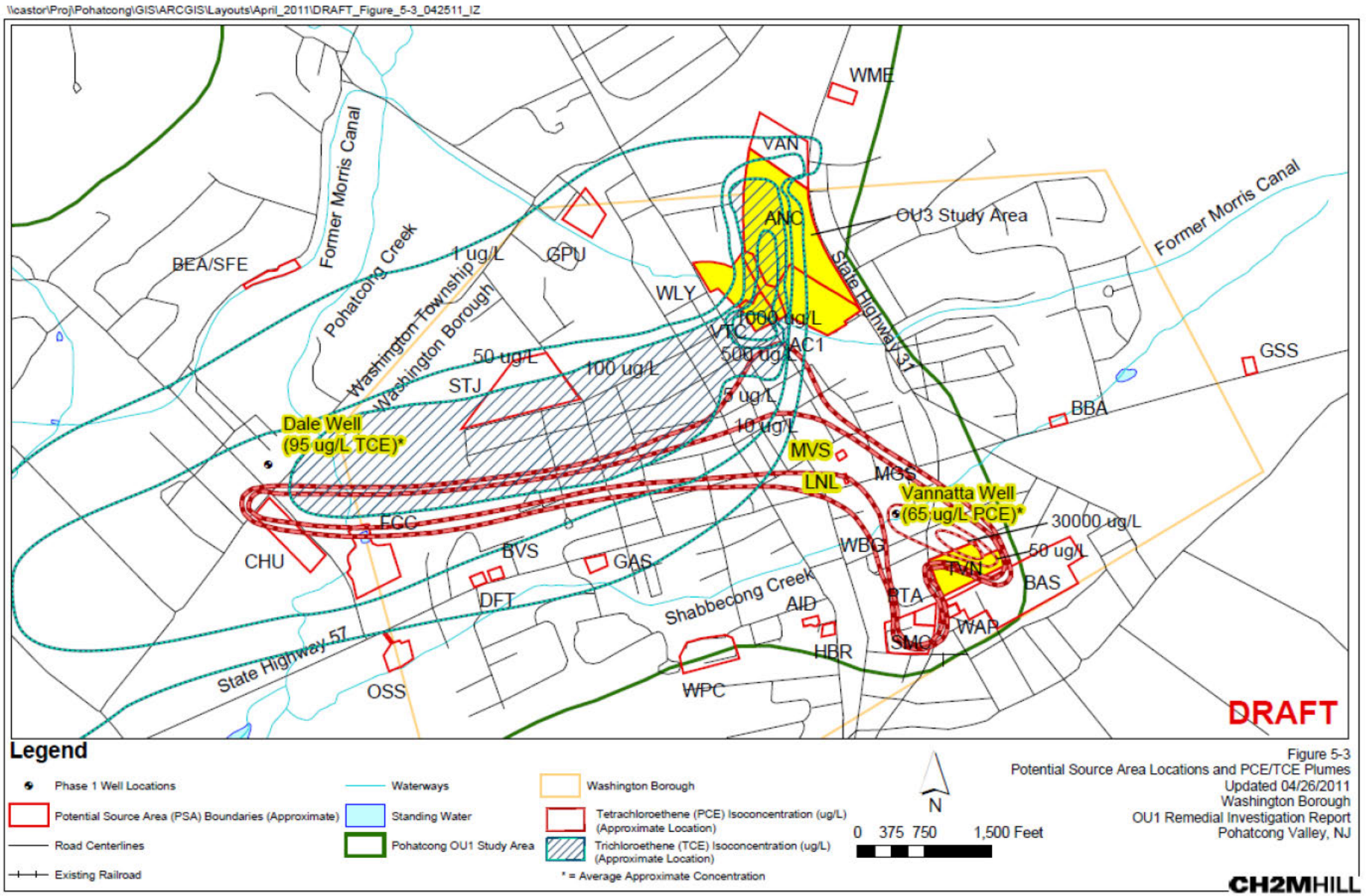
Site Study Area Locations



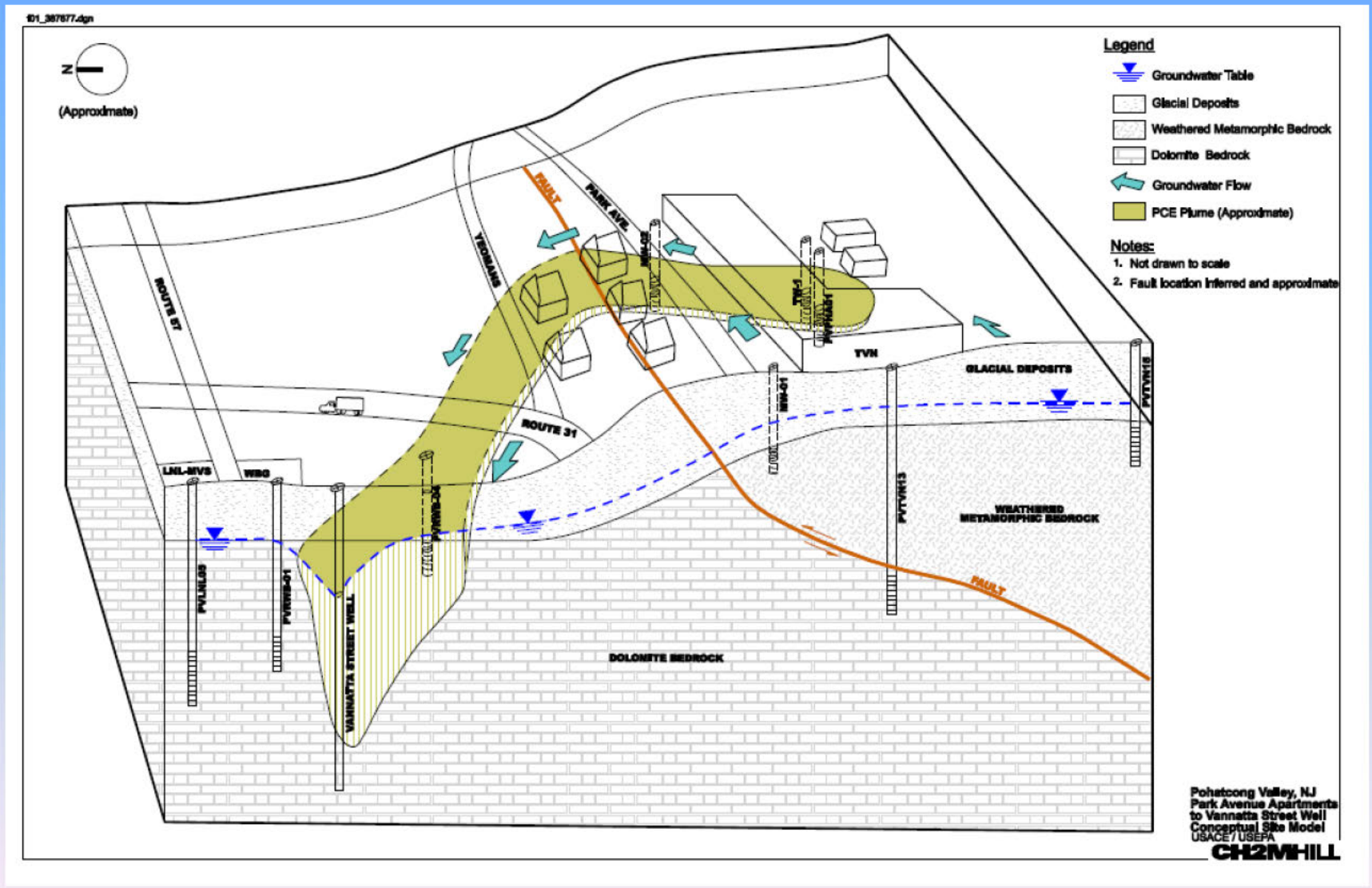
TCE and PCE Source Investigations

- Over 100 source areas investigated.
- PCE mainly from former tube manufacturing facility and smaller contribution from two defunct “mom and pop“ dry cleaners.
- TCE from former can company facility and possibly others.
- PCE levels far higher than TCE, but more local.
- TCE levels lower, but far larger aerial extent.

TCE/PCE Plume Source Area Locations



Conceptual Site Model



TCE and PCE Actions

- TCE contamination being addressed under enforcement program.
- PCE contamination originated from a former industrial facility (manufactured vacuum tubes for Navy) which subsequently was converted to residential apartment complex.
- TCE and PCE contamination forced closing of private wells and connection to public water supply (also impacted). Some POETS also installed where no municipal water available (downgradient area).
- Vapor mitigation systems installed under removal program at several locations in both TCE and PCE areas – additional systems anticipated.

PCE Remedy

- Pump and treat groundwater from center or most contaminated portion of plume (MNA for less contaminated, downgradient portion).
- Hook-up residences and businesses to public water supply that have not been connected.
- Install additional vapor intrusion mitigation systems as necessary. A number of structures have sub-slab air measurements well above screening criteria. Removal program only installed limited number of systems at locations with highest risks, deferring others to remedial program.
- Cost is roughly estimated at $5 million but will likely be higher once remedial design work completed.

Ranking Criteria

- There is a water risk mainly to residents who continue to use private wells instead of the public supply. Municipal water is treated to meet drinking water standards.
- There is an indoor air risk to residents with elevated vapor levels where VI mitigation systems have not yet been installed. Systems have only been installed in structures meeting removal criteria (for indoor air). Many structures have not yet been sampled.
- The PCE and especially the TCE is highly mobile and moving freely with the groundwater . TCE has been detected more than 10 miles downgradient from the site source.
- PCE groundwater concentrations in the center of the plume range up to 30,000 times the acceptable level. Sub-slab air has been measured over 400 times the EPA screening criteria (at a 10 -4 risk, 40,000 times at a 10 -6 risk) .
- PCE and other VOCs have been detected in nearby surface waters and sediments, but presently below ecological screening levels.
- The community wants to see more action and wants assurance that its air and water are safe. The remedy will intercept the PCE source and reduce public water supply treatment costs as well as reduce vapor intrusion impacts and associated EPA monitoring and vapor mitigation costs.